3) NON-TECHNICAL ABSTRACT OF THE CLINICAL PROTOCOL

Cardiac angina (chest pain) is the result of inadequate blood flow to the heart muscle, a condition called myocardial ischemia. Myocardial ischemia is most often caused by coronary artery disease (CAD). Cardiovascular disease is the number one cause of death in the United States of America, and most cardiovascular deaths are due to CAD. Medications, angioplasty and/or coronary artery bypass graft (CABG) surgery may be sufficient to reduce myocardial ischemia and thereby relieve chest pain in some patients. These methods are sufficient and suitable for many patients who have less advanced CAD. It is for the benefit of the patient with more advanced CAD, patients that are not suitable candidates for the more traditional treatments, that the Sponsor is investigating the use of gene therapy. It is hoped that this treatment will effectively increase blood flow within the heart of the patient with few remaining therapeutic options. Preliminary trials indicate that this specific gene therapy may have been, in some cases, extremely effective. The present study will evaluate a single dose of pVGI.1(VEGF2) (800ug) in an open-label fashion in up to seven patients who were previously randomized to placebo treatment in study VEGF2-CAD-CL-005.

This is an open-label, treatment protocol, study of the plasmid deoxyribonucleic acid (pDNA) named pVGI.1(VEGF2) administered to human subjects. The pDNA contains the gene for one normal human protein, vascular endothelial growth factor 2 (VEGF-2). Up to 7 patients may be enrolled in this study at two study sites. This study will investigate the individual patient's response to one dose of pDNA, 800 µg. The primary patient response to be evaluated is the patient's ability to exercise. Selected other responses and patient safety will also be evaluated. The dose of pDNA will be injected directly into the patient's heart muscle using an experimental per-cutaneous, cardiac injection catheter. Patients will be eligible for treatment only if they were previous participants in study VEGF2-CD-CL-005 and have advanced angina (Canadian Cardiovascular Society class III or IV angina). Furthermore, patients will only be eligible for this study if they are determined to be unable to undergo additional traditional revascularization procedures.

The treatment will involve using an experimental catheter to deliver deoxyribonucleic acid (DNA), or genetic material, into the heart. Once inside the heart muscle, this DNA may direct the muscle cells to make a single protein called vascular endothelial growth factor 2 (VEGF-2). The growth factor is a protein that has been shown to cause growth of new blood vessels under a variety of conditions. Laboratory experiments have suggested that VEGF-2 gene therapy may be used to grow new vessels in animals whose arteries have been surgically blocked. Additionally, VEGF-2 gene therapy is being investigated to increase blood flow and reduce resting leg pain (i.e., ischemic rest pain) in the feet or legs of patients with critical limb ischemia, or leg pain due to decreased blood flow in legs due to blocked arteries.

The Pre-treatment, Treatment and a Post-treatment Phases of this study will last up to 13 months. Following the last study visit patients will be required to have annual health evaluations for up to 15 years as required by federal regulations.

The data will be tabulated, analyzed and presented in an individual case study format. As patients were previously enrolled as placebo treatment patients in a similar protocol they may serve as their own controls.

In summary, the Sponsor is investigating the possibility that the delivery of VEGF-2 DNA into the myocardial muscle will result in the development of new blood vessels and thereby increase the blood supply to the heart and reduce chest pain.